

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 10 JUL 2001

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Applicant's or agent's file reference <b>D-8242-PCT</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US00/12686</b>	International filing date (day/month/year) <b>08 MAY 2000</b>	Priority date (day/month/year) <b>12 MAY 1999</b>
International Patent Classification (IPC) or national classification and IPC <b>IPC(7): GO9B 3/00, 5/04, 7/00 and US Cl.: 434/118, 157, 185, 308, 309, 317, 320, 322, 341</b>		
Applicant <b>BRAINX.COM</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 18 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>12 DECEMBER 2000</b>	Date of completion of this report  <b>23 MAY 2001</b>
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Form PCT/IPEA/409 (cover sheet) (July 1998) ★

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/12686

## 1. Basis of the report

## 1. With regard to the elements of the international application:\*

☐ the international application as originally filed☒ the description:

pages (See Attached)

, as originally filed

pages , filed with the demand

pages , filed with the letter of

☒ the claims:

pages (See Attached)

, as originally filed

pages , as amended (together with any statement) under Article 19

pages , filed with the demand

pages , filed with the letter of

☒ the drawings:

pages (See Attached)

, as originally filed

pages , filed with the demand

pages , filed with the letter of

☒ the sequence listing part of the description:

pages (See Attached)

, as originally filed

pages , filed with the demand

pages , filed with the letter of

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. NONE☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\*Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. statement**

Novelty (N)	Claims	<u>1-108</u>	YES
	Claims	<u>NONE</u>	NO
Inventive Step (IS)	Claims	<u>1-108</u>	YES
	Claims	<u>NONE</u>	NO
Industrial Applicability (IA)	Claims	<u>1-108</u>	YES
	Claims	<u>NONE</u>	NO

**2. citations and explanations (Rule 70.7)**

Claims 1-108 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a system for studying materials using machine-implemented feedback techniques, the steps comprising: designating material for studying to provide designated material; processing designated material to provide a query; querying a student with query; gauging student's response to query; and re-querying student according to response; whereby student is repeatedly queried regarding materials student has weaker understanding in preference to materials student has stronger understanding.

----- NEW CITATIONS -----  
NONE

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**I. BASIS OF REPORT:**

This report has been drawn on the basis of the description.

page(s) 1-15, as originally filed.

page(s) NONE, filed with the demand.

and additional amendments:

NONE

This report has been drawn on the basis of the claims.

page(s) NONE, as originally filed.

page(s) NONE, as amended under Article 19.

page(s) 16-23 and 23/1-23/10, filed with the demand.

and additional amendments:

NONE

This report has been drawn on the basis of the drawings.

page(s) 1-3, as originally filed.

page(s) NONE, filed with the demand.

and additional amendments:

NONE

This report has been drawn on the basis of the sequence listing part of the description:

page(s) NONE, as originally filed.

pages(s) NONE, filed with the demand.

and additional amendments:

NONE

## CLAIMS

REPLACED BY  
ART 34 AAMD

What is claimed is:

1. A method for studying materials using machine-implemented feedback techniques, the steps  
2 comprising:
  - 3 designating material for studying to provide designated material;
  - 4 processing said designated material to provide a query;
  - 5 querying a student with said query;
  - 6 gauging said student's response to said query; and
  - 7 re-querying said student according to said response; whereby
  - 8 said student is repeatedly queried regarding materials said student has weaker understanding in  
9 preference to materials said student has stronger understanding.
2. The method for studying materials using machine-implemented feedback techniques of claim 1,  
2 wherein said step of designating material further comprises designating electronic or digital information materials  
3 selected from the group consisting of:
  - 4 digital text;
  - 5 student input; and
  - 6 scanned materials.
3. The method for studying materials using machine-implemented feedback techniques of claim 2,  
2 wherein said digital text is selected from the group consisting of:
  - 3 contents of a web site;
  - 4 a digital book;
  - 5 an electronic text file; and
  - 6 a file of electronic information.
4. The method for studying materials using machine-implemented feedback techniques of claim 1,  
2 wherein said step of designating material further comprises:
  - 3 designating material selected from the group consisting of:
    - 4 fact-based materials;
    - 5 fiction-based materials;
    - 6 handwritten information including class notes;
    - 7 pure equations;
    - 8 jokes and stories;
    - 9 expressed thought processes;
    - 10 visually-based information;
    - 11 audio-based information; and
    - 12 audio-visual-based information.

5. The method for studying materials using machine-implemented feedback techniques of claim 2,  
2 wherein said scanned text further comprises:  
information scanned by a scanner.
6. The method for studying materials using machine-implemented feedback techniques of claim 5,  
2 wherein said scanner comprises a handheld scanner.
7. The method for studying materials using machine-implemented feedback techniques of claim 1,  
2 wherein said step of processing said designating material further comprises:  
determining an item for learning present in said designated material; and  
4 determining a question for querying said student regarding said item; whereby  
said student may be queried regarding said item by posing said question.
8. The method for studying materials using machine-implemented feedback techniques of claim 7,  
2 wherein said step of determining a question for querying said student is selected from the group consisting of:  
determining a drop-out question;  
4 determining a true-false question;  
determining a step-by-step multiple answer question;  
6 determining a general knowledge question;  
determining a multiple answer question;  
8 determining a joke or story question  
determining a summary or association question and  
10 determining an equation question.
9. The method for studying materials using machine-implemented feedback techniques of claim 7,  
2 wherein said step of determining a question for querying said student further comprises:  
indicating a portion of said designated material to be used as said question; and  
4 indicating a portion of said designated material to be used as said answer.
10. The method for studying materials using machine-implemented feedback techniques of claim 8, further  
2 comprising:  
indicating a summary question after determining a plurality of questions.
11. The method for studying materials using machine-implemented feedback techniques of claim 8, further  
2 comprising:  
indicating how information relates to material that the student has previously learned after  
4 determining a plurality of questions.
12. The method for studying materials using machine-implemented feedback techniques of claim 10,

wherein said plurality of questions further comprises:  
approximately 4 - 8 questions.

13. The method for studying materials using machine-implemented feedback techniques of claim 12,  
wherein said plurality of questions is machine defined.

14. The method for studying materials using machine-implemented feedback techniques of claim 10,  
wherein said plurality of questions further comprises:  
indicating a summary question after determining a number of questions.

15. The method for studying materials using machine-implemented feedback techniques of claim 14,  
wherein said number of questions is selectable by said student.

16. The method for studying materials using machine-implemented feedback techniques of claim 1,  
wherein said querying said student further comprises:  
querying said student according to information supplied by said student, said information selected  
from the group consisting of:  
class and/or coursework information;  
subject information;  
project information;  
prioritization of questions according to a likelihood of material to be tested; and  
evaluation of prior query performance.

17. The method for studying materials using machine-implemented feedback techniques of claim 16,  
wherein said prioritization of questions according to a likelihood of material to be tested further comprises:  
prioritization of questions according to a likelihood of material to be on a specific test.

18. The method for studying materials using machine-implemented feedback techniques of claim 1,  
wherein said step of gauging said student's response to said query further comprises:  
gauging said student's response according to said student's evaluation of an answer to said query.

19. The method for studying materials using machine-implemented feedback techniques of claim 18,  
wherein said student's evaluation of said answer is selected from the group consisting of:  
incorrect, correct and easy, correct and difficult.

20. The method for studying materials using machine-implemented feedback techniques of claim 1,  
wherein said step of gauging said student's response to said query further comprises:  
determining a type of learner said student is by analyzing said student's interaction with said query.

21. The method for studying materials using machine-implemented feedback techniques of claim 20,

wherein said step of re-querying said student further comprises:

re-querying said student according to said type of learner said student is.

22. The method for studying materials using machine-implemented feedback techniques of claim 1, further comprising:

designating backup information, said backup information complementing said designated material, said backup information providing greater background for queries delivered to said student.

23. The method for studying materials using machine-implemented feedback techniques of claim 1, further comprising:

rating said designated material according to a possibility of being tested on said designated material.

24. The method for studying materials using machine-implemented feedback techniques of claim 23, wherein said step of rating said designated material according to a possibility of being tested on said designated material further comprises:

said student conducting said rating.

25. The method for studying materials using machine-implemented feedback techniques of claim 23, wherein said step of rating said designated material according to a possibility of being tested on said designated material further comprises:

rating said designated material according to a possibility of being tested on said designated material, a second student indicating said rating where said second student has or had experience with said material or a class using said material.

26. The method for studying materials using machine-implemented feedback techniques of claim 25, wherein said step of rating said designated material according to a possibility of being tested on said designated material further comprises:

accumulating data from previous students who have taken a same class and who designated and/or rated material according to a possibility of being on a specific text.

27. The method for studying materials using machine-implemented feedback techniques of claim 1, wherein said step of querying a student further comprises:

providing entertainment subsequent to said query.

28. The method for studying materials using machine-implemented feedback techniques of claim 27, wherein said query is a final query in a group of queries.

29. The method for studying materials using machine-implemented feedback techniques of claim 27, wherein said step of providing entertainment further comprises:



providing entertainment based upon criteria selected from the group consisting of:  
a profile associated with said student; and  
a response evaluation arising from a prior entertainment.

30. The method for studying materials using machine-implemented feedback techniques of claim 29,  
further comprising:

rating of said entertainment by said student.

31. The method for studying materials using machine-implemented feedback techniques of claim 27,  
further comprising:

providing advertisement in association with said entertainment.

32. The method for studying materials using machine-implemented feedback techniques of claim 31,  
wherein said step of providing advertisement further comprises:

rating said advertisement by said student.

33. The method for studying materials using machine-implemented feedback techniques of claim 32,  
wherein said step of rating said advertisement is selected from steps in the group consisting of:

rating said advertisement, said student indicating appeal of said advertisement; and

rating a product or service advertised by said advertisement, said student indicating appeal of said  
advertised product or service.

34. The method for studying materials using machine-implemented feedback techniques of claim 1, further  
comprising:

sharing said query with a second student.

35. The method for studying materials using machine-implemented feedback techniques of claim 34,  
wherein said step of sharing said query is selected from steps in the group consisting of:

sharing said query over a computer network;

sharing said query by posting said query to a database of queries accessible by a computer network.

36. The method for studying materials using machine-implemented feedback techniques of claim 35,  
wherein said step of sharing said query further comprises:

limiting those with whom said query may be shared.

37. The method for studying materials using machine-implemented feedback techniques of claim 1,  
wherein said step of processing said designated material to provide a query further comprises:

pre-processing coursework materials to provide pre-processed coursework material for direct  
incorporation and use by said student; and

transmitting said pre-processed coursework material to said student.

38. The method for studying materials using machine-implemented feedback techniques of claim 37,  
further comprising:

encrypting said pre-processed coursework material so that only said student may use said pre-processed coursework material.

39. The method for studying materials using machine-implemented feedback techniques of claim 38,  
wherein said step of encrypting said pre-processed coursework material further comprises:

providing an encryption code specific to said student; and

encrypting coursework or other types of material to said student's encryption code prior to said material being downloaded to the student.

39. A method for studying educational materials using machine-implemented feedback techniques, the steps comprising:

designating material for studying to provide designated material;

said designated material selected from the group consisting of digital text, student input, scanned materials, fact-based materials, fiction based materials, handwritten information including class notes, pure equations, expressed thought processes, jokes and stories, visually-based information, audio-based information, audio-visual-based information, and pre-processed coursework material;

said digital text selected from the group consisting of contents of a web site, a digital book, and an electronic text file or other electronic information file;

said scanned text further comprising printed or handwritten text scanned by a handheld scanner;

processing said designated material to provide a query, including determining an item for learning present in said designated material and determining a question for querying a student regarding said item so that said student may be queried regarding said item by posing said question, said step of determining a question for querying said student selected from the group consisting of determining a drop-out question, determining a true-false question, determining a step-by-step multiple answer question, determining a general knowledge question, determining a multiple answer question, determining a joke or story question, determining a summary or association question and determining an equation question;

said step of determining a question for querying said student further comprising indicating a portion of said designated material to be used as said question and indicating a portion of said designated material to be used as said answer;

indicating a summary question after determining approximately 4 - 8 questions;

rating said designated material according to a possibility of being tested on said designated material, said student conducting said rating;

designating backup information, said backup information complementing said designated material, said backup information providing greater background for queries delivered to said student;

querying said student with said query and according to information supplied by said student, said information selected from the group consisting of class and/or coursework information, subject information, project information, prioritization of questions according to a likelihood of material to be tested, and evaluation of prior query performance;

30 providing a machine-generated hint when the student asks for a hint;  
gauging said student's response to said query including determining a type of learner said student  
32 is by analyzing said student's interaction with said query and including gauging said student's response  
according to said student's self-evaluation of an answer to said query, said student's self-evaluation of said  
34 answer selected from the group consisting of incorrect, correct and easy, correct and difficult;  
re-querying said student according to said response and according to said type of learner said  
36 student is and according to said student's self-evaluation of a prior answer to said query;  
providing entertainment based upon criteria selected from the group consisting of a profile  
38 associated with said student and a response evaluation arising from a prior entertainment;  
rating of said entertainment by said student;  
40 providing advertisement in association with said entertainment;  
rating said advertisement by said student, said rating of said advertisement selected from steps in  
42 the group consisting of rating said advertisement, said student indicating appeal of said advertisement, and  
rating a product or service advertised by said advertisement, said student indicating appeal of said  
44 advertised product or service;  
selectively sharing said query with a second student, said query subject to limitations restricting  
46 those with whom said query may be shared, said sharing of said query selected from steps in the group  
consisting of sharing said query over a computer network and sharing said query by posting said query  
48 to a database of queries accessible by a computer network; whereby  
said student is repeatedly queried regarding materials said student has weaker understanding in  
50 preference to materials said student has stronger understanding and allowing said student to learn study  
materials faster and more efficiently.

40. The method for studying materials using machine-implemented feedback techniques of claim 39,  
2 further comprising:

allowing said student to override any preference system and study all questions equally.

41. The method for studying materials using machine-implemented feedback techniques of claim 39,  
2 wherein said step of processing said designated material to provide a query further comprises:

pre-processing coursework materials to provide pre-processed coursework material for direct  
4 incorporation and use by said student; and  
transmitting said pre-processed coursework material to said student.

42. The method for studying materials using machine-implemented feedback techniques of claim 41,  
2 further comprising:

encrypting said pre-processed coursework material so that only said student may use said pre-  
4 processed coursework material.

43. The method for studying materials using machine-implemented feedback techniques of claim 39,  
2 further comprising:

predesigned templates that have built-in functions to enhance learning and to help a student study;  
4 helping a student place material to be learned into said templates where said student selects said material to be learned.

6 saving said material separate from the templates so that said material can be called up and placed in a proper template for study;

8 assigning portions of material selected by said student in unique colors;

showing said portions of said material to said student in said assigned colors;

10 allowing said student to select which learned information said student wants to keep active in said student's memory;

12 querying said student on said selected information at defined intervals, said intervals being definable by said student;

14 archiving information studied by said student so that it can easily be recalled by a machine at a later date and re-taught to said student in a same way as said student first learned said archived information.

16 querying said student after said student has finished a test to determine what questions were on said test; and

18 using information derived from said post-test query to adjust teaching similar information to said student in the future.

44. The method for studying materials using machine-implemented feedback techniques of claim 43,  
2 further comprising:

taking results of 2 or more of said post-test queries and combining said post-test query information  
4 to develop a list of information other students should learn who will take a same class in the future;

securing said post-test query information and sharing it with selected students; and

6 allowing said student to select which learned information said student wants to keep active in said student's memory and querying said student on said selected information at intervals where said intervals  
8 are selectable by machine.

45. The method for studying materials using machine-implemented feedback techniques of claim 43,  
2 further comprising:

stimulating said student's understanding by asking said student to create summary questions;

4 prompting said student to try to associate first information with second information that said student learned previously;

6 said student selecting key information in a sentence or paragraph selected by said student;

8 playing background music during said student's studying to improve retention and make studying more enjoyable and effective;

recording, learning and cataloging jokes and stories;

10 recording when and to what person or group a student told one of said jokes or stories; and

cataloging and managing a selected list of said jokes and stories.

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